AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

Town of Upton
P.O. Box 75
Upton, MA 01568

is authorized to discharge from the facility located at

Upton Wastewater Treatment Facility
43 Maple Street
Upton, MA 01568

to receiving water named **unnamed stream to West River**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit will become effective on the date of signature.

This permit and the authorization to discharge expire at midnight, on September 30, 2005.

This permit supersedes the permit issued on September 29, 1995.

This permit consists of 12 pages in Part I including effluent limitations, monitoring requirements; Attachment A. List of Outfalls; Attachment B, Freshwater Chronic Toxicity Test Protocol & Procedures; and 35 pages in Part II including General Conditions and Definitions.

Signed this 16th day of September, 2002

/Signature on File
Linda M. Murphy, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

Glenn Haas, Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number 001 to an unnamed stream to the West River. Such discharge will be limited and monitored by the permittee as specified below. Samples will be collected prior to discharging into the unnamed stream, and at a location that provides a representative analysis of the effluent.

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow	MGD	0.4	—	Report	Continuous*[1]	Recorder
BOD_5 (May 1 - October 31)	mg/l	12	20	Report	1/Week*[2]	24-Hour Composite*[3]
BOD_5 (November 1 - April 30)	mg/l	22	34	Report	1/Week*[2]	24-Hour Composite*[3]
BOD_5 (May 1 - October 31)	lbs/day	38	63	—	1/Week*[2]	24-Hour Composite*[3]
BOD_5 (November 1 - April 30)	lbs/day	75	113	—	1/Week*[2]	24-Hour Composite*[3]
TSS (May 1 - October 31)	mg/l	12	20	Report	1/Week*[2]	24-Hour Composite*[3]
TSS (November 1 - April 30)	mg/l	22	34	Report	1/Week*[2]	24-Hour Composite*[3]
TSS (May 1 - October 31)	lbs/day	38	63	—	1/Week*[2]	24-Hour Composite*[3]
TSS (November 1 - April 30)	lbs/day	75	113	—	1/Week*[2]	24-Hour Composite*[3]
pH	st. units	(See Condition I.A.1.b. on Page 6)			1/Day	Grab
Fecal Coliform Bacteria (April 1 - Oct. 31)*[4]	cfu /100 ml	200	—	400	1/Week	Grab
Total Residual Chlorine (April 1 - Oct. 31)*[5]	ug/l	11.2	—	19.4	3/Day	Grab
Ammonia-Nitrogen (May 1 - October 31)	mg/l	2.3	—	—	1/Week	24-Hour Composite*[3]
Ammonia-Nitrogen (Nov 1 - April 30)	mg/l	7.0	—	—	1/Week	24-Hour Composite*[3]
Total Kjeldahl Nitrogen	mg/l	Report	—	—	1/Month	24-Hour Composite*[3]
Total Nitrate	mg/l	Report	—	—	1/Month	24-Hour Composite*[3]

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Total Nitrite	mg/l	Report	—	—	1/Month	24-Hour Composite*[3]
Phosphorus, Total (May 1 - Oct. 31)*[10]	mg/l	0.2	—	Report	1/Week	24-Hour Composite*[3]
Phosphorus, Total (November 1 - April 30)	mg/l	Report	—	Report	1/Week	24-Hour Composite*[3]
Aluminum, Total *[10]	ug/l	88.7	—	765	6/Year*[11]	24-Hour Composite*[3]
Cadmium, Total *[6,*10]	ug/l	0.19	—	1.5	6/Year *[11]	24-Hour Composite*[3]
Copper, Total *[7]	ug/l	6.0	—	8.6	6/Year *[11]	24-Hour Composite*[3]
Lead, Total *[8]	ug/l	1.62	—	Report	6/Year *[11]	24-Hour Composite*[3]
Zinc, Total [*9]	ug/l	77	—	77	6/Year *[11]	24-Hour Composite*[3]
LC_{50} *[12,*15]	%	----	----	100	4/Year*[14]	24-Hour Composite*[3]
Chronic NOEC *[13,*15]	%	----	----	98	4/Year*[14]	24-Hour Composite*[3]

Footnotes:

*1. For flow, report maximum and minimum daily rates and total flow for each operating date. The flow limit is an annual average. The annual average flow will be reported each month and will be calculated using the monthly average flow from the reporting month and the monthly average flows from the preceding 11 months.

*2. Sampling is required for influent and effluent.

*3. A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during one working day (e.g., 7 am. Monday - 7 am. Tuesday).

*4. Fecal coliform monitoring will be conducted seasonally. This is a State certification requirement. The monthly average limit is expressed as a geometric mean. Fecal coliform samples will be collected at the same time as chlorine residual samples.

*5. The minimum level (ML) for total residual chlorine is defined as 50 ug/l. This value is the minimum level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G, or UNITED STATES ENVIRONMENTAL PROTECTION AGENCY Manual of Methods of Analysis of Water and Wastes, Method 330.5. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 50 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 50 ug/l or less shall be reported as zero on the discharge monitoring report.

*6. The minimum level (ML) for cadmium is defined as 2 ug/l. This value is the minimum level for copper using the Furnace Atomic Absorption analytical method (EPA Method 220.2). This method must be used to determine total cadmium. For effluent limitations less than 2 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 2 ug/l or less shall be reported as zero on the Discharge Monitoring Report.

*7. The minimum level (ML) for copper is defined as 5 ug/l. This value is the minimum level for copper using the Furnace Atomic Absorption analytical method (EPA Method 220.2). This method must be used to determine total copper. Sample results of 5 ug/l or less shall be reported as zero on the Discharge Monitoring Report.

*8. The minimum level (ML) for lead is defined as 5 ug/l. This value is the minimum level for lead using the Furnace Atomic Absorption analytical method (EPA Method 220.2). This method must be used to determine total lead. For effluent limitations less than 5 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 5 ug/l or less shall be reported as zero on the Discharge Monitoring Report.

*9. Values of total zinc will be measured using either the Inductively Coupled Plasma (ICP) or Furnace AA method.

*10. See Part I.B., Schedule of Compliance. Monitoring results for the phosphorus (monthly average) limit and the aluminum and cadmium (maximum daily and monthly average) limits will be report-only for the first year of the permit, and the limitations will be effective one year from the effective date of the permit.

*11. The permittee will conduct sampling every other month.

*12. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) will cause no more than a 50% mortality rate.

*13. C-NOEC (chronic-no observed effect concentration) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the test results exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, the permittee must report the lowest concentration where there is no observable effect. The "98 % or greater" limit is defined as a sample which is composed of 98 % (or greater) effluent, the remainder being dilution water. This is a maximum daily limit derived as a percentage of the inverse of the dilution factor of 1.02.

*14. The permittee will conduct chronic (and modified acute) toxicity tests four times per year, and will test the daphnid, Ceriodaphnia dubia and the fathead minnow, Pimephales promelas. Toxicity test samples will be collected during the second week in January, April, July, and October. The test results will be submitted by the last day of the month following the completion of the test. The results are due February 28th, May 31th, August 31th, and November 30th, respectively. The tests must be performed in accordance with test procedures and protocols specified in **Attachment B** of this permit.

Test Dates: Second Week in	**Submit Results By:**	**Test Species:**	**Acute Limit: LC_{50}**	**Chronic Limit: C-NOEC**
January April July October	February 28th May 31th August 31th November 30th	Ceriodaphnia dubia (Daphnid) Pimephales promelas (Fathead minnow) See Attachment B	≥ 100 % ≥ 100 %	≥ 98 % ≥ 98 %

After submitting four consecutive sets of whole effluent toxicity (WET) test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing in accordance with the permit until notice is received by certified mail from the EPA that the WET testing requirements have been changed.

*15. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee will follow procedures outlined in **Attachment B Section IV., DILUTION WATER** in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required in **Attachment B**, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called "Guidance Document") which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee will revert to obtaining approval as outlined in **Attachment B**. The "Guidance Document" has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA's Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this "Guidance Document" will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment B**.

Part I.A.1. (Continued)

a. The discharge will not cause a violation of the water quality standards of the receiving waters.

b. The pH of the effluent will not be less than 6.5 nor greater than 8.3 at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes. The sample collection time will provide a representative analysis of the effluent.

c. The discharge will not cause objectionable discoloration of the receiving waters.

d. The effluent will contain neither a visible oil sheen, foam, nor floating solids at any time.

e. The permittee's treatment facility will maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal will be based on monthly average values.

f. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the 0.4 MGD designed flow, the permittee will submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.

g. The permittee will minimize the use of chlorine while maintaining adequate bacterial control, and will seasonally disinfect from April 1st - October 31st each year.

2. All POTWs must provide adequate notice to the Director of the following:

a. Any new introduction of pollutants into that POTW from an indirect discharger in a primary industry category discharging process water; and

b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

c. For purposes of this paragraph, adequate notice will include information on:

(1) the quantity and quality of effluent introduced into the POTW; and

(2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

3. Prohibitions Concerning Interference and Pass Through:

a. Pollutants introduced into POTW's by a non-domestic source (user) will not pass through the POTW or interfere with the operation or performance of the works.

b. If, within 30 days after notice of an interference or pass through violation has been sent by EPA to the POTW, and to persons or groups who have requested such notice, the POTW fails to commence appropriate enforcement action to correct the violation, EPA may take appropriate enforcement action.

4. Toxics Control

a. The permittee will not discharge any pollutant or combination of pollutants in toxic amounts.

b. Any toxic components of the effluent will not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

5. Numerical Effluent Limitations for Toxicants

EPA or MADEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

B. SCHEDULE OF COMPLIANCE

Since the phosphorus monthly average limit and the aluminum and cadmium maximum daily and monthly average limits are new for this permit, this permit allows a compliance schedule of one year from the effective date of this permit. Specifically, the permittee will report the aluminum, cadmium (maximum daily and monthly average) and phosphorus (monthly average) concentrations during the first year of this permit, while working towards meeting the limitations.

C. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from outfalls listed in **Attachment A** of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) are not authorized by this permit and will be reported in accordance with Part II. Section D.1.e.(1) of the General Requirements of this permit (Twenty-four hour reporting).

D. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system will be in compliance with the General Requirements of Part II and the following terms and conditions:

1. Maintenance Staff

   The permittee will provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

2. Preventative Maintenance Program

   The permittee will maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program will include an inspection program designed to identify all potential and actual unauthorized discharges.

3. Infiltration/Inflow Control Plan:

   The permittee will develop and implement a plan to control infiltration and inflow (I/I) to the separate sewer system. The plan will be submitted to EPA and MADEP within six months of the effective date of this permit (see page1of this permit for the effective date) and will describe the permittee's program for preventing infiltration/inflow related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to excessive infiltration/inflow.

   The plan will include:

   (1) An ongoing program to identify and remove sources of infiltration and inflow. The program will include the necessary funding level and the source(s) of funding.

   (2) An inflow identification and control program that focuses on the disconnection and

redirection of illegal sump pumps and roof down spouts. Priority should be given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows.

(3) Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.

(4) An educational public outreach program for all aspects of I/I control, particularly private inflow.

Reporting Requirements:

A summary report of all actions taken to minimize I/I during the previous calendar year will be submitted to EPA and the MADEP annually, by the anniversary date of the effective date of this permit. The summary report will, at a minimum, include:

(1) A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.

(2) Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year.

(3) A map with areas identified for I/I-related investigation/action in the coming year.

(4) A calculation of the annual average I/I, the maximum month I/I for the reporting year.

(5) A report of any infiltration/inflow related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Unauthorized Discharges section of this permit.

4. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee will continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR §122.2).

5. Chlorination System Report

Within 1 year of the effective date of the permit, the permittee will submit a report documenting the effectiveness of the chlorination and dechlorination systems. The report will specifically address how flow variability and chlorine demand variability affect compliance with the total residual chlorine (TRC) and fecal coliform limits at all times. Sampling data will be provided to support conclusions on how hourly and daily flow and chlorine demand variability affects permit compliance. The report will include a description of the chlorination and dechlorination systems, and the methods for dosage control. The report will identify all changes necessary to ensure compliance with the TRC and fecal coliform limits at all times, including equipment modifications and upgrades, operational procedures (including calibration procedures and alarm/response procedures), and sampling protocols. The report will include a schedule for

implementing all of the necessary changes. An annual report will be submitted by **February 28** of each year summarizing all exceedances of the TRC and fecal coliform effluent limits during the previous year, the estimated or measured fecal coliform and chlorine discharge levels during the exceedance, and measures taken to fix the problem and to prevent future occurrences.

E. SLUDGE CONDITIONS

1. The permittee will comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.

2. The permittee will comply with the more stringent of either the state or federal (40 CFR Part 503), requirements.

3. The requirements and technical standards of 40 CFR Part 503 apply to facilities which perform one or more of the following use or disposal practices.

   a. Land application - the use of sewage sludge to condition or fertilize the soil

   b. Surface disposal - the placement of sewage sludge in a sludge only landfill

   c. Sewage sludge incineration in a sludge only incinerator

4. The 40 CFR part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g., lagoons- reed beds), or are otherwise excluded under 40 CFR 503.6.

5. The permittee will use and comply with the attached compliance guidance document to determine appropriate conditions. Appropriate conditions contain the following elements:

   - General requirements
   - Pollutant limitations
   - Operational Standards
     (pathogen reduction requirements and vector attraction reduction requirements)
   - Management practices
   - Record keeping
   - Monitoring
   - Reporting

   Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.

6. The permittee will monitor the pollutant concentrations, pathogen reduction and vector attraction reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year:

less than 290	1/ year
290 to less than1500	1 /quarter

1500 to less than 15000	6 /year
15000 +	1 /month

7. The permittee will sample the sewage sludge using the procedures detailed in 40 CFR 503.8.

8. The permittee will submit an annual report containing the information specified in the guidance. Reports are due annually by **February 19.** Reports will be submitted to the address contained in the reporting section of the permit. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge disposal. The permittee must be assured that any third party contractor is in compliance with appropriate regulatory requirements. In such case, the permittee is required only to submit an annual report on February 19 containing the following information:

   - Name and address of contractor responsible for sludge disposal
   - Quantity of sludge in dry metric tons removed from the facility by the sludge contractor

F. INDUSTRIAL USERS

a. Pollutants introduced into POTWs by a non-domestic source (user) will not Pass Through the POTW or Interfere with the operation or performance of the works.

b. The permittee will identify, in terms of character and volume of pollutants, and report to EPA any significant indirect dischargers into the POTW subject to pretreatment standards under section 307(b) of the Clean Water Act and 40 CFR part 403.

G. MONITORING AND REPORTING

1. Reporting

Monitoring results obtained during each calendar month will be summarized and reported on Discharge Monitoring Report Form(s) postmarked no later than the 15th day of the following month.

Signed and dated originals of these, and all other reports required herein, will be submitted to the Director and the State at the following addresses:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

The State Agency is:

Massachusetts Department of Environmental Protection
Central Regional Office
627 Main Street
Worcester, Massachusetts 01608

Signed and dated Discharge Monitoring Report Forms and toxicity test reports required by this permit will also be submitted to the State at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

H. STATE PERMIT CONDITIONS

This discharge permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MADEP) under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MADEP pursuant to M.G.L. Chap. 21, §43.

Each Agency will have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit will be effective only with respect to the Agency taking such action, and will not affect the validity or status of this permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared, invalid, illegal or otherwise issued in violation of State law such permit will remain in full force and effect under Federal law as an NPDES permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of Federal law, this permit will remain in full force and effect under State law as a permit issued by the Commonwealth of Massachusetts.